Entergy

Entergy Operations, Inc.
P.O. Box 756
Port Gibson, Mississippi 39150

Jeff A. Hardy
Regulatory Assurance Manager
Grand Gulf Nuclear Station
Tel: 601-437-7500

10 CFR 50.73

GNRO-2021/00019

August 19, 2021

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

SUBJECT: Grand Gulf Nuclear Station, Unit 1 Revised Licensee Event Report 2020-002-02

Grand Gulf Nuclear Station, Unit 1
Docket No. 50-416
Renewed License No. NPF-29

Attached is revised Licensee Event Report 2020-002-02, Reactor Scram Due to Main Turbine Trip. This report is being submitted in accordance with 10 CFR 50.73(a)(2)(iv)(A), for any event or condition that resulted in manual or automatic actuation of the Reactor Protection System (RPS).

This letter contains no new Regulatory Commitments. Should you have any questions concerning the content of this letter, please contact Jeff Hardy, Regulatory Assurance Manager at 269-764-2011.

Sincerely,

Jeff A. Hardy
JAH/fas

Attachments: Revised Licensee Event Report 2020-002-02

cc: NRC Senior Resident Inspector
Grand Gulf Nuclear Station
Port Gibson, MS 39150

U.S Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Attachment
Revised Licensee Event Report 2020-002-02

NRC FORM 366 (08-2020) U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

(See Page 3 for required number of digits/characters for each block)

(See NUREG-1022, R.3 for instruction and guidance for completing this form http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 08/31/2023

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Library, and Information Collections Branch (T-6 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk ail: oira_submission@omb.eop.gov. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

1. Facility Name	2. Docket Number	3. Page
Grand Gulf Nuclear Station, Unit 1	05000 416	1 OF 3

4. Title

Reactor Scram Due to Main Turbine Trip

5. Event Date			6. LER Number			7. Report Date			8. Other Facilities Involved	
Month	Day	Year	Year	Sequential Number	Rev No.	Month	Day	Year	Facility Name	Docket Number
									N/A	05000 N/A
05	25	2020	2020	- 002	- 02	08	19	2021	Facility Name	Docket Number
									N/A	05000 N/A

9. Operating Mode	11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: *(Check all that apply)*			
1	☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
	☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
	☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
	☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☒ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
10. Power Level	☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
66	☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
	☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(C)	☐ 73.77(a)(1)
	☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(D)	☐ 73.77(a)(2)(ii)
	☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(iii)
		☐ 50.73(a)(2)(i)(C)	☐ Other (Specify in Abstract below or in NRC Form 366A	

12. Licensee Contact for this LER

Licensee Contact	Telephone Number (Include Area Code)
Jeff Hardy, Manager Regulatory Assurance	(601) 437-2103

13. Complete One Line for each Component Failure Described in this Report

Cause	System	Component	Manufacturer	Reportable To ICES	Cause	System	Component	Manufacturer	Reportable To ICES
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

14. Supplemental Report Expected	15. Expected Submission Date	Month	Day	Year
☐ Yes (If yes, complete 15. Expected Submission Date) ☒ No				

Abstract (Limit to 1400 spaces, i.e., approximately 14 single-spaced typewritten lines)

At 0433 CT on Monday, May 25, 2020, while operating in MODE 1 at approximately 66 percent power, Grand Gulf Nuclear Station (GGNS) experienced an automatic Reactor SCRAM due to a Main Turbine Trip. All systems responded as designed. The plant was stabilized in MODE 3.

The Root Cause of the event is that Entergy Engineering Leadership (Corporate Projects and Site Engineering) did not ensure critical assumptions in EC 72780, Turbine Control Protection System – Non-Safety, were documented or validated for turbine shaft movement during operation where a reduction in margin was present in accordance with EN-DC-115, Engineering Change Process roles and responsibilities were not well communicated across organizations, and leadership behaviors were lacking to promote sufficient challenge to achieve an acceptable result to prevent an unplanned Scram.

The corrective actions to preclude repetition was to revise EN-HU-104, Technical Task Risk & Rigor, to require creation of a detailed table listing generation risk parameters (setpoints, settings, dimensions) for engineering changes with high generation risk.

There were no consequences to the general safety of the public, nuclear safety, industrial safety and radiological safety. This report is made in accordance with 10 CFR 50.73(a)(2)(iv)(A), for any event or condition that resulted in manual or automatic actuation of the Reactor Protection System (RPS).

LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET

(See NUREG-1022, R.3 for instruction and guidance for completing this form http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Grand Gulf Nuclear Station, Unit 1	05000-416	2020	- 002	- 02

NARRATIVE

Plant Conditions:

Grand Gulf Nuclear Station (GGNS) Unit 1 was operating at approximately 66 percent power in MODE 1. There were no Structures, Systems, or Components that were inoperable that contributed to this event.

Event Description:

At 0433 CT on Monday, May 25, 2020, while operating in MODE 1 at approximately 66 percent power, GGNS experienced an automatic Reactor SCRAM due to a Main Turbine [TA] Trip at a power level beyond the capability of the Turbine Bypass valves. The unit was shutdown without complication using pressure control through the main condenser. The unit tripped during valve testing in the initial power ascension following implementation of a Digital Turbine Control System upgrade during RF22.

All systems responded as designed. No loss of offsite power or Engineered Safety Feature actuation occurred. No Emergency Core Cooling System or Emergency Diesel Generator initiations occurred. Main Steam Isolation valves remained open and no radioactive release occurred due to this event. The plant was stabilized in MODE 3.

This event was reported under 10 CFR 50.72(b)(2)(iv)(B), for any event that results in the actuation of the Reactor Protection System (RPS), when the reactor is critical. Event Notification EN54725.

This report is made pursuant to 10 CFR 50.73(a)(2)(iv)(A), as any event or condition that results in manual or automatic actuation of the RPS.

Event Cause(s):

The direct cause of the trip was determined to be inadvertent overspeed signals from two (2) Active Speed Probes which contacted the speed wheel installed on the turbine shaft. The contact resulted from movement of the shaft during operation of the turbine. The contact occurred when one of four steam lines to the High-Pressure turbine was being isolated during valve stroke testing. The speed sensing probes, and speed sensing wheel had been modified via installation of new equipment during RF22 with a smaller air gap which reduced operating margin.

The Root Cause of the event is that Entergy Engineering Leadership (Corporate Projects and Site Engineering) did not ensure critical assumptions in EC 72780, Turbine Control Protection System – Non-Safety, were documented or validated for turbine shaft movement during operation where a reduction in margin was present. In accordance with EN-DC-115, Engineering Change Process roles and responsibilities were not well communicated across organizations, and leadership behaviors were lacking to promote sufficient challenge to achieve an acceptable result to prevent an unplanned Scram.

Safety Assessment:

The Reactor Scram due to the Main Turbine Trip did not result in actual consequences to safety of the general public, nuclear safety, industrial safety or radiological safety. The safety significance of this event is determined to be low. The response to the Scram was performed in accordance with plant procedures. Plant parameters (reactor level, pressure) were maintained within procedure and safety limits. There were no actual nuclear safety consequences or radiological consequences during the event.

LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET

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Corrective Actions:

A work order was implemented to change the active and passive turbine speed probe to speed wheel air gap from 35 mils to 50 mils which bounds the original equipment air gap setting of 47 mils (the minimum air gap is now larger than the original air gap). This action is complete.

To preclude repetition, Entergy's procedure EN-HU-104, Technical Task Risk and Rigor, was revised to require creation of a detailed table listing generation risk parameters (setpoints, settings, dimensions) being revised for engineering changes with high generation risk. This table lists the old parameter, new, and basis for acceptability. This table would then be presented for challenge such as Independent Third-Party Review, and challenge board.

Entergy placed the vendor on Conditional Services until their cause analysis was completed, cause and corrective actions were accepted by Entergy, and associated actions are completed.

Previous Similar Event:

Entergy conducted a three-year review of the relevant licensee event reports and determined that there were no similar events.